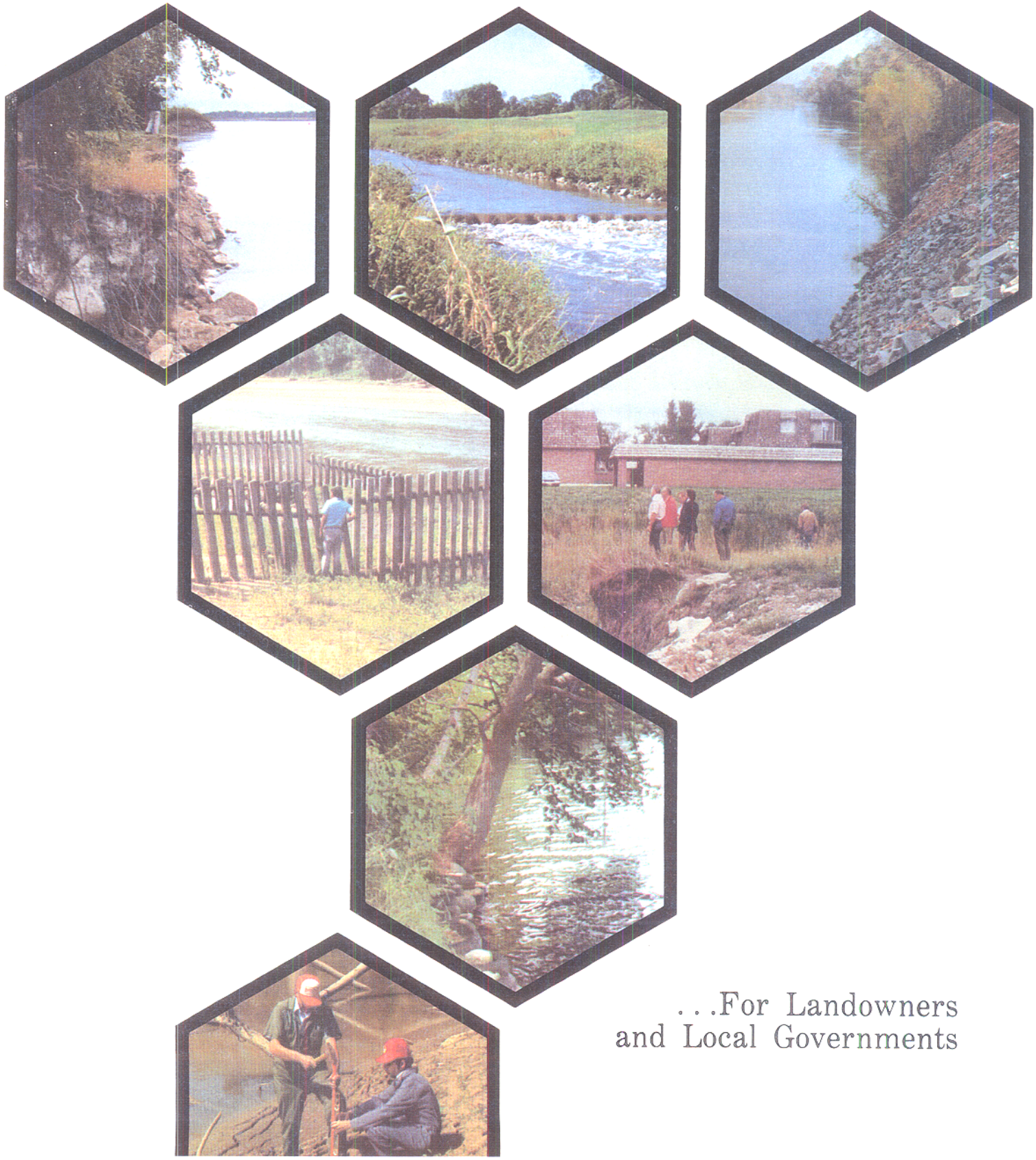
Streambank Protection Guidelines



. . .For Landowners
and Local Governments

Vegetation is nature's way of protecting a streambank.

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CREDITS

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Preface

Large-scale efforts to control soil erosion have been under way in the United States since the "dirty thirties" when wind erosion turned much of the fertile farming area of the Great Plains into a wasteland. Initial soil conservation efforts were directed toward saving topsoil in agricultural areas; however, as the value and use of land near streams increased, the need for effective bank protection techniques quickly became apparent. Many miles of streambank along major waterways have been protected as part of navigation and flood control projects; however, many streams still need bank protection. A 1969 study by the U.S. Army Corps of Engineers showed that of the 7 million miles of streambank in the United States 550,000 miles were experiencing some degree of erosion, while 148,000 miles or 2 percent were being severely eroded. Although 2 percent seems like a small portion of the total length of streambanks in the United States, the annual economic losses occurring as the result of the severe erosion approached $90 million in 1969.

In recognition of the serious economic losses occurring throughout the Nation due to streambank erosion, the U.S. Congress passed the Streambank Erosion Control Evaluation and Demonstration Act of 1974, Section 32, Public Law 93-251 (as amended by Public Law 94-587, Section 155 and Section 161, October 1976). This legislation, called the Section 32 Program, authorized the Corps of Engineers to conduct a 7-year study to examine the causes of streambank erosion, to evaluate the effectiveness of existing and new methods of bank protection, and to prepare documentation for the Congress describing the findings of the Section 32 Program. As instructed in the authorizing legislation, the Corps prepared an Interim Report in 1978 describing work completed through the midterm of the Program. The Final Report was submitted to the Congress in April 1982. After this report was submitted, the Corps was requested to develop a streambank protection pamphlet written in laymen's language to make available to landowners and local governments information gained during the Section 32 Program so that the public as well as the technical community would benefit from the Program. As a result of the request, this pamphlet was prepared by the U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Introduction

Streambank protection is a complex subject. There are no engineering manuals available with construction plans for bank protection projects that are guaranteed to work. Likewise, the U.S. Army Corps of Engineers cannot guarantee that the streambank protection methods discussed in this pamphlet will provide a foolproof approach to save a bank. However, this pamphlet does provide landowners and local governments with general information needed to develop a systematic plan of action for solving a streambank protection problem. By understanding the cause of the problem, matching the problem with a suitable bank protection method, making efficient use of available resources, and initiating a regular maintenance program once the project is completed, the chances for successfully protecting a distressed streambank will be greatly improved.

Although every effort was made to avoid the use of technical language in this pamphlet, some words that are perhaps unfamiliar to the reader must necessarily be introduced to properly discuss items related to streambank protection. The meaning of many of these terms is discussed in the text; however, a glossary is provided at the end of this pamphlet for reference.